In the specifications:

Please amend the specifications by replacing the corresponding paragraphs with the paragraphs supplied herein.

[0020] Thus there is provided a multi-reflective acoustic wave device comprising a substrate having at least one layer of uniform thickness piezoelectric substance having at least one substantially flat surface capable of generating, guiding, and detecting an acoustic wave. A reflective grating is deposited on said flat surface having a length along its longitudinal axis, said length defining longitudinal extents of an active area, wherein said active area covered on at least 60% of its longitudinal dimension by electromechanically active elements of said reflective grating, said elements being spaced at substantially periodic intervals commensurating with the wavelength of said acoustic wave~~. An~~, and forming an input transducer and an output transducer, each integrated into said reflective grating, and comprising a plurality of electromechanically active and significant interdigitated electrodes. The input transducer is adapted to induce an acoustic waves, said acoustic wave having a frequency and a vector, and guided by said surface or between said surfaces to travel substantially perpendicularly to said electrodes. A propagation path is interposed between said input and output transducers. The reflective grating is constructed to create an electromechanically significant reflective coupling between the forward and a reverse traveling acoustic wave induced in the piezoelectric substance. The reflectivity of the grating is commonly stated as (κ/K_T), wherein κ represents the unnormalized reflective coupling (in 1/meters), and is normalized to the fundamental spatial frequency component of the transducer, and $K_T = 2\pi/\lambda$. Reflective gratings have, by definition, a nonzero value of reflectivity, and are further defined to have a minimum reflectivity value.

[0043] Input and output transducers are integrated within the reflective gratings. The transducers are dispersive in nature and are constructed to interact with the wave in a manner that will cause the wave to have a velocity which is different than the constant velocity expected from the propagation of a given frequency in the crystal (i.e. in the absence of the stopband.) Each transducer covers a large area, typically in excess of 30%, of the active area, and comprises a large number of electromechanically ~~significant~~ active electrodes. The transducer bandwidth (in the absence of the stopband effect) is designed to be close to the stopband width of the reflective grating (i.e. the bandwidth in which the grating spatial separation causes constructive interaction with the signal). Because of the dispersion, the resulting pass band of the acoustic wave device can be made to be 2 to 10 times more narrow than it would be without the stopband for the same size transducer.

[0048] Therefore in the preferred embodiment substantially all the active area is covered by electrodes of the input transducer 310, output transducer 330, and the optional intermediate grating 320. In contrast to the known delay line in which the propagation path of the intermediate area is mechanically passive, and the electrodes' electromechanical significance is minimized, in the present invention most of the active area is covered by electromechanically ~~significant~~ active (trtansducing) electrodes, and the non-driven propagation path is either very small (e.g. a fractional wavelength phase offset) or is electromechanically ~~active~~ significant (multi-reflective) by virtue of the electrodes of the intermediate grating. Since the electrodes used are made electromechanically significant, a local reflection is created under each such electrode, and the local reflections are added coherently from the input to the output, providing the required high coupling efficiency. This structure allows the transducers a strong coupling to the crystal and thus increased electrical efficiency, as well as offering the wide operating range required.

[0054] In experiments it was found that while the common insertion loss of a delay line is in the order of 20 dB, a device constructed in accordance with the present invention can achieve an insertion loss in the order of 7.5 dB (increasing ~~off~~ of course with the level of damping caused by he measured substance).